IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

LINEAR TECHNOLOGY CORPORATION, Plaintiff, v. MONOLITHIC POWER SYSTEMS, INC., Defendant.	)))))))))	C.A. No. 06-476 (GMS)

THE PARTIES' JOINT CLAIM CONSTRUCTION CHART
FOR THE PATENTS-IN-SUIT WITH CITATIONS TO INTRINSIC SUPPORT

The parties have met and conferred, and present the following Joint Claim Construction Chart with citations to intrinsic support for the patents being asserted by Linear Technology Corporation ("Linear"), pursuant to the January 30, 2007 Scheduling Order (D.I. 30).

U.S. Patent Nos. 5,481,178 (the '178 Patent) and 6,580,258 (the '258 Patent) are related, and share the same specification. Therefore, citations to the patent specifications in the Joint Claim Construction Chart with citations to intrinsic support (attached as Exhibit A) are made with reference to the '178 Patent.

I. Stipulated Constructions.

During the meet and confer process, the parties agreed on the constructions for certain claim terms for the '178 and '258 Patents as set forth under "Agreed Upon Constructions" in Exhibit A. The parties jointly and respectfully submit that, if the Court deems appropriate, the Court include the list of agreed-upon constructions in its claim construction order. In the alternative, the parties agree that unless the Court determines that a different construction is the correct construction, the parties agree to be bound by the agreed-upon constructions.

II. Claim Constructions Requiring Construction by the Court.

The parties' Joint Claim Construction Chart for the '178 and '258 Patents is set forth under "Disputed Constructions and Intrinsic Evidence" in Exhibit A. This chart identifies the disputed claim terms in each patent, the parties' proposed constructions for the disputed claim terms, and the parties' respective identifications of the intrinsic evidence in support of their proposed constructions. MPS objects to Linear's citations to claim charts prepared by parties other than MPS in other lawsuits and to prior court orders in Linear's submission of intrinsic evidence for this Joint Claim Construction Chart.

MORRIS, NICHOLS, ARSHT & TUNNELL LLP

/s/ Karen Jacobs Louden (#2881)
Jack B. Blumenfeld (#1014)
Karen Jacobs Louden (#2881)
Leslie A. Polizoti (#4299)
1201 N. Market Street
P.O. Box 1347
Wilmington, DE 19899
(302) 658-9200
klouden@mnat.com
Attorneys for Plaintiff
Linear Technology Corporation

OF COUNSEL:

Raphael V. Lupo
Joel M. Freed
Mark G. Davis
Ronald J. Pabis
Stephen K. Shahida
McDERMOTT WILL & EMERY LLP
600 13th Street, N.W.
Washington, DC 20005
(202) 756-8000

POTTER ANDERSON & CORROON LLP

/s/ Richard L. Horwitz (#2246)
Richard L. Horwitz (#2246)
Kenneth L. Dorsney (#3726)
Hercules Plaza, 6th Floor
1313 North Market Street
Wilmington, DE 19889
(302) 984-6000
rhorwitz@potteranderson.com
Attorneys for Defendant
Monolithic Power Systems, Inc.

OF COUNSEL:

Dean G. Dunlavey
Mark A. Flagel
Robert Steinberg
Sean S. Pak
LATHAM & WATKINS
633 West Fifth Street, Suite 4000
Los Angeles, CA 90071
(213) 485-1234

June 4, 2007
849612

COMPARISON OF MPS AND LTC'S PROPOSED CONSTRUCTION OF CLAIM TERMS IN DISPUTE

AGREED UPON CONSTRUCTIONS

CLAIM TERMS	AGREED UPON CONSTRUCTION
monitoring (Claims 1, 41 of '178 Patent) (Claims 1, 34 of '258 Patent)	"Monitoring" a signal or output means to keep track of it.
current supplied to the load (Claims 1, 34, 41, 55 of '178 Patent)	The output current.
output current (Claims 1, 34, 41 of '178 Patent)	The current that flows from the output terminal to the load.

DISPUTED CONSTRUCTIONS AND INTRINSIC EVIDENCE[1]

CLAIM TERMS	MPS'S PROPOSED CONSTRUCTION	MPS'S INTRINSIC EVIDENCE	LINEAR'S PROPOSED CONSTRUCTION	LINEAR'S INTRINSIC EVIDENCE
switching voltage regulator (Claims 1, 34, 41, 55 of '178 Patent) (Claims 1, 34 of '258 Patent)	A device or circuit that is capable of receiving a poorly specified and fluctuating input voltage and that provides a predetermined and essentially constant output voltage by controlling the opening and closing of a switch	'178 Patent: claims 1, 34, 41, 55; Figures 1 and 2; 1:12-14, 1:20-30, 1:58-61, 3:53-60; prosecution history including but not limited to Office Action dated 2/10/94, Election dated 2/18/94 and Response dated 6/5/95 '258 Patent: claims 1, 34;	A device or circuit that receives an input voltage and provides a predetermined and regulated output voltage by controlling the opening and closing of one or more switching transistors. (Predetermined means determined by design, and includes voltages that may be	Voltage regulators, and switching voltage regulators in particular, are the subject of the '178 and '258 Patents in their entirety. More specifically, switching voltage regulators are described at 1:12-30. *See, e.g.*, Figs. 2-5, 7-9, and 10 of the '178 patent and corresponding sections of the '258 patent.

[1] These are exemplary cites to the intrinsic evidence. Each party reserves the right to rely upon the entirety of the intrinsic evidence including the claim language, the patent specification and prosecution history to support its constructions or to oppose the other party's constructions. MPS objects to Linear's citations to claim charts prepared by parties other than MPS in other lawsuits and to prior court orders in Linear's submission of intrinsic evidence for this Joint Claim Construction chart.

CLAIM TERMS	MPS'S PROPOSED CONSTRUCTION	MPS'S INTRINSIC EVIDENCE	LINEAR'S PROPOSED CONSTRUCTION	LINEAR'S INTRINSIC EVIDENCE
		corresponding sections in patent specification	fixed or variable).	Linear does not agree that any of the claims are limited to the particular embodiment of Fig. 2, and does not agree that the restriction requirement or Linear's election imposes such a limitation.
coupled (Claims 1, 34, 41, 55 of '178 Patent) (Claims 1, 34 of '258 Patent)	Circuit elements are "coupled" when they are so arranged that energy can transfer electrically or magnetically from one to another	'178 Patent: claims 1, 34, 41, 55; Figures 1 and 2; 3:57-58 '258 Patent: claims 1, 34; corresponding sections in patent specification	Circuit elements are coupled when a current path exists between them.	*See, e.g.*, 1:17-24 and Fig. 1; 15:40-46 of the '178 patent and corresponding sections of the '258 patent.. Same construction as that adopted by the Court in *Linear v. Impala et al.* *See* CCO at 7 (Case No. C 98-1727 FMS, June 9, 1999) and Joint Claim Construction Chart in *Linear v. Impala et al.* at 1.
output terminal (Claims 1, 34, 41, 55 of '178 Patent)	A specific point of the switching voltage regulator that is directly connected to the load	'178 Patent: claims 1, 34, 41, 55; Figures 1 and 2; 3:53-57	A point or node of the switching regulator to which the load is coupled.	*See, e.g.*, character 12 in the Figs. and 3:53-57 of the '178 patent and corresponding sections of the '258 patent. Same construction as that adopted by the Court in *Linear v. Impala et al.* *See* CCO at 7 (Case No. C 98-1727 FMS, June 9, 1999)); and Joint Claim Construction Chart in *Linear v. Impala et al.* at 2.
load (Claims 1, 34, 41, 55 of '178 Patent) (Claims 1, 34 of '258 Patent)	A device, circuit, or system that consumes electric power; not part of the regulator structure	'178 Patent: claims 1, 34, 41, 55; Figures 1 and 2; 2:26-31, 3:53-57, 4:46-52, 6:17-19, 6:34-46, 12:14-18 '258 Patent: claims 1, 34;	A device, circuit, or system coupled to the output terminal to which the regulator can supply current.	*See, e.g.*, character 14 in the Figs. and 3:53-57 of the '178 patent and corresponding sections of the '258 patent.. See also CCO at 7 (Case No. C

CLAIM TERMS	MPS'S PROPOSED CONSTRUCTION	MPS'S INTRINSIC EVIDENCE	LINEAR'S PROPOSED CONSTRUCTION	LINEAR'S INTRINSIC EVIDENCE
		corresponding sections in patent specification		98-1727 FMS, June 9, 1999).
a pair of synchronously switched switching transistors (Claims 1, 34, 41, 55 of '178 Patent) (Claims 1, 34 of '258 Patent)	A pair of switching transistors are "synchronously switched" when they are "driven out of phase to supply current at a regulated voltage to a load." "Driven out of phase" means that the two switching transistors do not turn "on" and "off" at the same time at all times.	'178 Patent: claims 1, 34, 41, 55; Figures 1 and 2; 7:38-43 '258 Patent: claims 1, 34; corresponding sections in patent specification	Two switching transistors are synchronously switched when they are driven out of phase (i.e., one is ON and the other is OFF, except for deadtime) to supply current at a regulated voltage to a load.	*See, e.g.*, 3:1-4 and 61-64; 5:33-43; 6:1-2; 7:40-43 of the '178 patent and corresponding sections of the '258 patent.. See also, *Linear v. Impala et al.* Summary Judgment Order by Judge Walker at 3, modifying the CCO.
regulated voltage (Claims 1, 34, 41, 55 of '178 Patent) (Claims 1, 34 of '258 Patent)	A predetermined and essentially constant output voltage	'178 Patent: claims 1, 34, 41, 55; 1:12-14, 1:22-24, 1:31-35, 6:34-46, 6:53-60, 6:61-7:32 '258 Patent: claims 1, 34; corresponding sections in patent specification	A voltage having a controlled value.	*See, e.g.*, 3:53-58; 4:1-2; 6:39-41 and 53-58; and 7:6-32 of the '178 patent and corresponding sections of the '258 patent. Same construction as that adopted by the Court in *Linear v. Impala et al.* *See* CCO at 8 (Case No. C 98-1727 FMS, June 9, 1999) and Joint Claim Construction Chart in *Linear v. Impala et al.* at 2.
substantially at the regulated voltage (Claims 41 of '178 Patent) (Claims 1, 34 of '258 Patent)	A voltage that has a different average value than the regulated voltage	'178 Patent: claim 41; 2:26-36, 5:59-66, 6:61 to 7:17, 7:56-67, 8:1-16 '258 Patent: claims 1, 34; corresponding sections in patent specification	A voltage having a controlled value, and allowing for, but not requiring, greater variation than the regulated voltage (*i.e.*, controlled value).	*See, e.g.*, 7:6-21, 7:22-26, and 13:18-20 of the '178 patent and corresponding sections of the '258 patent. Same construction as that adopted by the Court in *Linear v. Impala et al.* *See* CCO at 25-26 (Case No. C 98-1727 FMS, June 9, 1999).

CLAIM TERMS	MPS'S PROPOSED CONSTRUCTION	MPS'S INTRINSIC EVIDENCE	LINEAR'S PROPOSED CONSTRUCTION	LINEAR'S INTRINSIC EVIDENCE
first state of circuit operation (Claims 1, 34, 41 of '178 Patent) (Claims 1, 34 of '258 Patent)	A state in which the output voltage is maintained during high load current conditions by switching the switching transistors in a complementary manner to provide power to the load	'178 Patent: claims 1, 34, 41, 55; Figures 1 and 2; 4:22-30, 4:46-52; 6:17-34; 6:47-60, 8:1-13 '258 Patent: claims 1, 34; corresponding sections in patent specification	A state in which the switching transistors are both enabled for switching and are synchronously switched such that one transistor is ON and the other is OFF (except for deadtime), with a varying duty cycle to maintain a regulated voltage at the output terminal.	*See, e.g.*, 5:59-6:16; 6:61-7:5; 8:1-16; and 12:1-13 and 19 of the '178 patent and corresponding sections of the '258 patent.. Same construction as that adopted by the Court in *Linear v. Impala et al.* *See* CCO at 8 (Case No. C 98-1727 FMS, June 9, 1999).
third circuit (Claim 1 of '178 Patent) (Claims 1, 34 of '258 Patent)	A circuit that is separate and distinct from both the "first circuit" and the "second circuit"	'178 Patent: claim 1; Figure 2; 6:34 to 7:5 '258 Patent: claim 1; corresponding sections in patent specification	An assembly of electronic components forming a control circuit that is distinct from each of the first and second circuits in that not every electronic component of the circuits is the same.	Linear's construction is consistent with the Court's construction in *Linear v. Impala et al.* *See* CCO at 9 (Case No. C 98-1727 FMS, June 9, 1999). The Federal Circuit has ruled that for this phrase in this particular patent that 35 U.S.C. §112, ¶6 does not apply. *Linear Technology Corp. v. Impala Linear Corp., et al.*, 379 F.3d 1311, 1320 (Fed. Cir. 2004). Examples of the third circuit are illustrated in Figs. 2 and 7. *See also, e.g.*, 6:34-7:5; 12:46-13:2; and 16:5-16 of the '178 patent and corresponding sections of the '258 patent.. Concerning the use of the term "separate and distinct," Linear is concerned that MPS will take the position that the sub-circuit that comprises the "third circuit" may not have any

CLAIM TERMS	MPS'S PROPOSED CONSTRUCTION	MPS'S INTRINSIC EVIDENCE	LINEAR'S PROPOSED CONSTRUCTION	LINEAR'S INTRINSIC EVIDENCE
				overlap of components with other sub-circuits (*e.g.*, the "second circuit") that correspond to other claim elements. If so, then such a construction would not read on the preferred embodiment, and such a limitation would be untethered to the specification. Consequently, the term "separate and distinct" should not be interpreted to mean that the "third circuit" cannot share components, or have any overlap, with the first or second circuits.
first control signal (Claims 1, 34 of '178 Patent) (Claims 1 of '258 Patent)	A signal generated by the second circuit and used to affect the operation of other circuitry, which signal is separate and distinct from the "second control signal"	'178 Patent: claims 1, 34; Figures 1 and 2; 4:22-30, 4:46-52; 6:17-34; 6:47-60, 7:2-5 '258 Patent: claim 1; corresponding sections in patent specification	A control signal generated by the second circuit and used to affect the operation of other circuitry.	The Court in *Linear v. Impala et al.* construed "control signal" in general as "a signal generated by a circuit and used to affect the operation of other circuitry." See CCO at 8 (Case No. C 98-1727 FMS, June 9, 1999). *See, e.g.*, the output of one-shot circuit 25, or a replacement circuit, 4:8-45; 9:13-22. *See, e.g.*, output of 245 in Fig. 7; 4:8-52; 5:53-54; 6:17-33; 9:36-11:67; and 12:14-45 of the '178 patent and corresponding sections of the '258 patent..
second control signal (Claims 1, 34 of '178 Patent) (Claims 1 of '258	A signal generated by the third circuit and used to affect the operation of other circuitry, which signal is separate and distinct from the "first control	'178 Patent: claims 1, 34; Figure 2; 6:34-7:37, 8:1-13 '258 Patent: claim 1; corresponding sections in	A control signal generated by the third circuit and used to affect the operation of other circuitry.	The Court in *Linear v. Impala et al.* construed "control signal" in general as "a signal generated by a circuit and used to affect the operation of other

CLAIM TERMS	MPS'S PROPOSED CONSTRUCTION	MPS'S INTRINSIC EVIDENCE	LINEAR'S PROPOSED CONSTRUCTION	LINEAR'S INTRINSIC EVIDENCE
Patent)	signal"	patent specification		circuitry." See CCO at 8 (Case No. C 98-1727 FMS, June 9, 1999). *See, e.g.*, 5:55-58; 5:59-6:5; 6:34-7:21; 12:49-13:19 of the '178 patent and corresponding sections of the '258 patent..
second state of circuit operation (Claims 1, 34, 41 of '178 Patent) (Claims 1, 34 of '258 Patent)	A state in which, as a result of low load current conditions, the output capacitor maintains the output voltage substantially at the regulated voltage, while the switching transistors are disabled	'178 Patent: claims 1, 34, 51, 55; Figure 2; 6:34-7:37; prosecution history including but not limited to Response dated 6/5/95 '258 Patent: claims 1, 34; corresponding sections in patent specification	A state (excluding deadtime) during which both switching transistors are OFF and current is supplied to the load by the output capacitor.	*See, e.g.*, 8:7-11 of the '178 patent and corresponding sections of the '258 patent. Same construction as that adopted by the Court in *Linear v. Impala et al.* *See,* CCO at 26 (Case No. C 98-1727 FMS, June 9, 1999).
threshold fraction of maximum rated output current (Claims 1, 34, 41 of '178 Patent)	A fixed number greater than zero that is selected as a proportionality of two numbers, the proportion being relative to maximum rated output current	'178 Patent: claims 1, 31, 34, 41; Figure 2; 5:59-66, 6:17-21, 6:34-36, 12:14-17; prosecution history including but not limited to Response dated 6/5/95	Predetermined level or value at which some change in circuit operation takes place, wherein that level or value is a number greater than zero that represents the proportionality of two positive numbers, the proportion being relative to a rated maximum output current. (Predetermined means determined by design, and includes levels or values that may be fixed or variable.)	*See, e.g.*, 5:18-32; 6:17-28 and 41-44; 9:4-11; and 12:14-29 and 49-52 of the '178 patent and corresponding sections of the '258 patent.. Same construction as that adopted by the Court in *Linear v. Impala et al.* *See* CCO at 12-13 (Case No. C 98-1727 FMS, June 9, 1999).
threshold (Claim 3 of '258 Patent)	A fixed point, such as a current or voltage level, for a given effect, result, or response	'258 Patent: claim 3; Figures 1 and 2; 4:36-41, 6:17-46	Predetermined level or value at which some change in circuit operation takes place. (Predetermined means	The threshold need not be fixed. *See, e.g.*, Fig. 7 and Claim 41; 4:36-41; 6:17-47; and 12:14-29 of the '178 patent and corresponding

CLAIM TERMS	MPS'S PROPOSED CONSTRUCTION	MPS'S INTRINSIC EVIDENCE	LINEAR'S PROPOSED CONSTRUCTION	LINEAR'S INTRINSIC EVIDENCE
			determined by design, and includes levels or values that may be fixed or variable.)	sections of the '258 patent.
a first means for generating a voltage feedback signal indicative of the voltage at the output (Claim 34 of '178 Patent)	This is a means-plus-function element governed by § 112, ¶ 6. The structures disclosed in the specification that correspond to the recited function are the following and their equivalents: (i) the combination of resistors 36A and 36B; (ii) the combination of resistors R1 and R2 and operational amplifier 602; and (iii) voltage feedback circuit 220.	'178 Patent: claim 34; Figures 1 and 2; 4:19-50, 6:17-25	This is a means-plus-function limitation, and it is to be construed to cover the corresponding structure(s) and equivalents thereof. The corresponding structures described in the specification include a resistor divider, with or without an operational amplifier, or other conventional voltage feedback circuits.	*See, e.g.*, 4:19-24; 6:19-25; 9:39-45; 12:19-25; resistors R1 and R2; operational amplifier 602; voltage feedback circuit 220; Fig. 2; Fig. 5; and Fig. 7 of the '178 patent and corresponding sections of the '258 patent..

CLAIM TERMS	MPS'S PROPOSED CONSTRUCTION	MPS'S INTRINSIC EVIDENCE	LINEAR'S PROPOSED CONSTRUCTION	LINEAR'S INTRINSIC EVIDENCE
a second means for generating a first control signal ... to maintain the output terminal at the regulated voltage (Claim 34 of '178 Patent)	This is a means plus function element governed by § 112, ¶ 6. The structures in the specification that correspond to the recited function are the following and their equivalents: (i) the combination of drive circuit 20, transconductance amplifier 38, offset voltage V_{OS} 76, reference circuit 37, current source I_1 72, current comparator 39, and constant off-time one shot circuit 25, which outputs the first control signal; (ii) combinations having a pulse-width modulator circuit that provides a pulse width modulated signal in response to a control signal, Patent col. 9:18-21; (iii) circuit 240 in Fig. 5.; (iv) the combination illustrated in Fig. 7 (resistors Rsense and R3, one-shot circuit 245, off time controller 250 and capacitor C_{CON}); (v) an "operational amplifier," Patent col. 10:15-16; and (vi) the circuitry described at col. 13 lines 36-46.	'178 Patent: claim 34; Figure 2; 4:19-67, 6:17-33	This is a means-plus-function limitation, and it is to be construed to cover the corresponding structure(s) and equivalents thereof. The corresponding structures described in the specification include: • As illustrated in Fig. 2, the combination of drive circuit 20, transconductance amplifier 38, offset voltage V_{os} 76, reference voltage 37, current comparator 39, a feedback current path I_{FB} between inductor L_1 32 and current comparator 39, and constant off-time one-shot circuit 25, which outputs the first control signal; • combinations having a pulse-width-modulator circuit or a variable-off-time one-shot circuit (*e.g.*, circuit 240 of Fig. 5 or the circuit described at 10:15-16); or • As illustrated in Fig. 7, the combination of resistors R_{SENSE} and R_3, V_{REF}, V_{OS}, current comparator 39, one-	*See, e.g.*, 4:8-52; 5:59-6:6; 6:25-33; 6:61-7:5; 8:1-16; 9:12-22; 10:11-16; 12:1-13:19; 13:40-46; 15:22-35; 15:66-16:4; and output of one-shot circuit 245 in Fig. 7 of the '178 patent and corresponding sections of the '258 patent. For a pulse-width- modulator circuit, *see also Linear Technology Corp. v. Impala Linear Corp., et al.*, 379 F.3d 1311, 1322 (Fed. Cir. 2004).

CLAIM TERMS	MPS'S PROPOSED CONSTRUCTION	MPS'S INTRINSIC EVIDENCE	LINEAR'S PROPOSED CONSTRUCTION	LINEAR'S INTRINSIC EVIDENCE
			shot circuit 245, off-time controller 250, and capacitor C_{CON}.	
a third means for generating a second control signal ... the period of time having a duration which is a function of the current supplied to the load by the regulator (Claim 34 of '178 Patent)	This is a means plus function element governed by § 112, ¶ 6. The structures in the specification that correspond to the recited functions are the following and their equivalents: (i) the combination of hysteretic comparator 74, the offset voltage 76, constant current source I_1 (72), logic gates 66, 68, and 69, and reference voltage 37, all as disclosed in Figure 2; and (ii) the circuitry disclosed in Figure 7 (72, 74, V_{OS}, 315, 316 and related sleep control logic).	'178 Patent: claim 34; Figure 2; 6:34-7:37; prosecution history including but not limited to Response dated 6/5/95	This is a means-plus-function limitation, and it is to be construed to cover the corresponding structure(s) and equivalents thereof. The corresponding structures described in the specification include: • As illustrated in Fig. 2, hysteretic comparator 74, V_{REF}, current source I_1 72, and logic circuits 66, 68, and 69; • As illustrated in Fig. 7, combinations such as the circuitry including 72, 74, 315, 316, V_{REF}, and related sleep control logic; or • combinations such as those disclosed at 16:5-12.	*See, e.g.*, 6:34-7:5; 12:46-13:2; and 16:5-16; Fig. 2; and Fig. 7 of the '178 patent and corresponding sections of the '258 patent.
selected sleep mode current level (Claim 55 of '178 Patent)	A fixed current level that represents a percentage of maximum rated output current below which the regulator is operated in a second mode of circuit operation	'178 Patent: claim 55; Figure 2; 5:59-66, 6:17-21, 6:34-36, 12:14-17; prosecution history including but not limited to Response dated 6/5/95	A current level below which the regulator enters into a second mode of operation.	*See, e.g.*, 6:17-46 and 12:14-59 of the '178 patent and corresponding sections of the '258 patent.. *See also* CCO at 30 (Case No. C 98-1727 FMS, June 9, 1999) and Joint Claim Construction Chart in *Linear v. Impala et al.* at 44.